FACTORS AFFECTING FEDERAL AND STATE AID

FROM

"A NATIONAL PLAN FOR AMERICAN FORESTRY"

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FEDERAL AID

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The traditional policy of the United States as to disposition of forest land is one of private ownership. Through liberal and laxly enforced laws for private acquisition and through grants to States, railroads, and other public and semipublic institutions, the largest share of the forest lands of the country had passed from Federal ownership before the policy of disposition was in part reversed by the act of March 3, 1891, which authorized the President to withdraw from entry remaining federally owned lands suitable for forestry purposes.

The States had generally followed the Federal policy of disposing of grant lands to private owners, and large grantors, of whom railroad companies were the most important, followed a similar plan. Therefore, when early in the present century public concern was aroused over the possibilities of a shortage of timber supplies and the condition of watersheds, the question was largely related to land in private ownership.

Following the act of 1891 approximately 20 percent of the remaining forest land of the country had been withdrawn from entry and included in the national forest system. Practically all of this was in the far western public-domain States. The States still owned a large acreage of forest land, but this was in general being passed to private ownership as fast as possible under generous disposal policies. A few States had made small beginnings toward permanent ownership and management of forest lands, and a relatively small aggregate area was held by municipalities and minor political subdivisions for the protection of public water supply. Many owners were actively engaged in protecting and otherwise managing their forest lands with the purpose of preserving existing timber values until they could be liquidated through cutting, in creating new values, or in preserving forest conditions for other reasons. This was being done both by individuals and by owner associations, the efforts of the latter being predominant in the Northwest, where owners were carrying heavy investments in commercial timber that were particularly liable to fire losses.

In 1911, the public concern in the state of forested lands culminated in the enactment of the Weeks law for Federal aid in forestry. At that time 16 States had provided by law for systems of protection extending over part or all of the forest land within their borders and had set up organizations for actual protection work. Protection of privately owned forests as a function of government had thus been firmly established.

Since Federal ownership represented the most certain form of progress, continued protection and improvement of Federal properties, as well as extension of Federal ownership, was obviously desirable policy from a forestry standpoint. But it was clearly impracticable to extend Federal ownership at once to any large percentage of forest land in which the public was interested. Such a course was barred both by the enormous sums of money that would be required for acquisition and management, and by the thoroughly established system of private ownership. A second possibility was to leave the land in private and other ownership but to bring about through regulation such systems of management as would safeguard the public interest. Most leaders in the movement believed that public dictation in the management of privately owned forest land would be contrary to traditional American thought and custom, and hence at that time impracticable, even where considered desirable.

It was apparent that the existing classes of forest-land ownership would continue, and that therefore any complete Federal program would have to extend to all of them. It seemed also apparent that the easiest and least expensive way, if not the only possible way, for the Federal Government to exert any wide influence immediately was through working with the facilities already set up. Through the medium of Federal assistance conditioned on State assistance of at least equal amount it was hoped that owners of forest land would be encouraged to hold it for forestry purposes. It was believed that the majority would find it to their interest to install such practices as would satisfy the public need and that eventually public requirements agreeable to most landowners would follow to insure the results desired. The legislation embodied in the Weeks Act (March 1, 1911) followed out these general ideas in creating what is known as the Federal-aid system.

While the Weeks Act provided for Federal acquisition of forest land and Federal aid in protecting State and privately owned land from fire, it expressly applied only to forest land on the watersheds of navigable streams. There is much evidence, however, that navigability of streams was not in reality the prime incentive for the legislation. A review of the statements made by those interested in promoting Federal acquisition, fire protection, and forestry extension indicates that they had in view all of the public values inherent in forestry. Aid to navigation was but one of the considerations, although in the minds of some of those who supported the legislation it may have constituted a sufficient single reason for the action taken.

The gains established through the administration of the Weeks Act have been consolidated and enlarged through the Clarke-McNary Act of June 7, 1924, the operation of which has already been discussed in some detail. Briefly, the principle of Federal aid to the States is now well intrenched, the States have responded with large contributions to forestry on their own account, and the situation promises well for the Nation-wide forestry program of the future.

THE FEDERAL INTEREST IN STATE FORESTRY

The most important reasons which foresters and other prominent advocates have assigned for Federal participation in forestry activities are the following:

1. The provision of an adequate timber supply.
2. Erosion and flood control.
3. Safeguarding scenic and recreational interest.

To what degree these objectives are of concern to the Federal Government is a question deserving a brief analysis at this point.

THE INTERSTATE INTEREST IN TIMBER SUPPLY

In table 1 are shown, by regions, estimates of the present annual cut of timber, present annual amount of wood used, and the ultimate annual growth of wood that may reasonably be expected under such handling of the forest lands as would presumably result if the objectives set up in this report were attained. (See section "Present and Potential Timber Resources." Subsection on "Timber Growth.") These estimates afford some idea of what the situation may be when all or most of our remaining virgin timber has been harvested and the country is faced with the necessity of balancing its consumption against production.

Here the interdependence of the various regions of the country is plainly indicated by the figures of present consumption and present cut. While the totals roughly balance, in no region are forest demand and forest supply even approximately equal.

Furthermore, even though a State may produce a total much larger than it consumes, no one State produces all the forest products that it needs and uses. In every State there is need for woods of a kind or quality which it does not produce, and which are more cheaply or conveniently obtained from other States. The Pacific Coast States, for example, contain only small quantities of hardwoods and must secure their main supply from the South and East. Table 2 proves the reality and magnitude of this interstate dependence. It shows that in the distribution of all sawed lumber used in 1928 more than half of it crossed State lines. The problem of timber supply is thus obviously a matter of concern not only to individual States but to the Nation as a whole.

TABLE 1.—*Present annual timber cut, consumption, and theoretical ultimate future growth of timber in the United States*

Region	Present cut	Present consumption	Theoretical ultimate growth
	Million cubic feet	*Million cubic feet*	*Million cubic feet*
New England	619	874	748
Middle Atlantic	772	2,567	1,002
Lake States	1,267	1,770	1,773
Central	2,067	4,113	1,959
South	6,418	3,970	9,500
Pacific Coast	2,937	1,408	2,059
North Rocky Mountain	287	114	499
South Rocky Mountain	128	248	215
Total	14,495	15,064	17,755

TABLE 2.—*Sawed lumber derived from other States, 1928* [1]

	1,000 feet board measure
Alabama	174, 498
Arizona	42, 333
Arkansas	110, 939
California	2, 055, 048
Colorado	185, 476
Connecticut	232, 767
Delaware	41, 955
Florida	22, 911
Georgia	119, 344
Idaho	67, 203
Illinois	2, 236, 314
Indiana	753, 617
Iowa	540, 395
Kansas	404, 201
Kentucky	393, 410
Louisiana	229, 783
Maine	54, 962
Maryland and District of Columbia	503, 389
Massachusetts	627, 141
Michigan	1, 162, 033
Minnesota	533, 844
Mississippi	44, 097
Missouri	678, 959
Montana	74, 164
Nebraska	303, 770
Nevada	53, 539
New Hampshire	67, 535
New Jersey	665, 869
New Mexico	47, 125
New York	2, 486, 134
North Carolina	206, 229
North Dakota	136, 711
Ohio	1, 383, 251
Oklahoma	346, 644
Oregon	86, 151
Pennsylvania	1, 534, 379
Rhode Island	151, 626
South Carolina	25, 104
South Dakota	137, 840
Tennessee	563, 116
Texas	723, 643
Utah	120, 443
Vermont	25, 487
Virginia	293, 154
West Virginia	117, 422
Washington and Alaska	153, 832
Wisconsin	561, 165
Wyoming	110, 586
Total	21, 589, 538

EROSION AND FLOOD CONTROL

No quantitative estimates can be cited to indicate the interstate interest in forests from the standpoint of their value in reducing the destructive forces of water, but the hundreds of millions of dollars spent by the Federal Government on levee construction alone affords some measure of the Nation's concern in flood control as such. Investigations tend to prove that forestry is a basic instrumentality of flood control hitherto neglected. As to soil erosion, it is known to have a disastrous effect through impoverishment of the area from

[1] Forest Service estimates.

which it comes and sometimes even more through sanding and silting of the region in which it is deposited. If, therefore, through depletion of forest cover erosion is accelerated, damage arises to the public to the extent that it is interested either in soil productivity or in the navigability or purity of streams.

The interstate interest in forested watersheds from these various points of view is fully discussed in another section of this report. For the purpose of illustration here it will be sufficient to call attention to the vast territorial range of only three of our major drainage systems. The Mississippi system drains all or parts of 31 States, and its watersheds include about one fourth of the total forest land of the country. The watersheds of the Columbia and the Colorado each include nearly one tenth of the total forest land. The Columbia drains parts of 6 States, and the Colorado parts of 6 States. Control of floods, erosion, or any other problem of such river systems is a matter of Federal no less than State and local concern. And it is a fundamental premise of forestry that every successful effort made by the public toward restoring, maintaining, and protecting forest and vegetative cover is directly reflected in better control of floods, erosion, and run-off in general.

SCENIC AND RECREATIONAL INTERESTS

The interstate use of forest land for scenic and recreational purposes depends on a proper combination of natural features to appeal to the outdoor interests of the American public. As a rule, the most popular vacation areas are to be found in mountainous or lake country with a cool summer climate.

It is not believed that interstate as against State use of forest land for recreation should be given too serious weight in determining a Federal aid policy, particularly if the Federal aid is largely compensating through similarity of State situations. The relative value of resources to the State as compared to their value to the Nation as a whole is particularly difficult to estimate, and the interests of both parties should be given fair consideration. Some light is thrown on this aspect of the case by a United States Bureau of Biological Survey report showing that of some 7 million State hunting licenses issued for the 1929–30 season, only about 55,000 were to nonresidents. A prominent example of nonresident recreation is seen in Colorado, where, according to estimates of the "Colorado Association," 790,000 summer visitors in 1931 spent $72,396,000, paying to the State $436,142, in gasoline tax alone. A similar report from the "New England Council" estimates that over $500,000,000 is spent in that region annually by recreationists, many of whom, of course, cross State boundaries on the way.

On the other hand, while each national park is visited by people from every State each year, Park Service reports indicate a relatively much greater use by people residing near them. For example, about 20 percent of the annual visitors to Yellowstone Park are residents of the three States surrounding it, although the combined population of these States is only 1 percent of the total population of the United States. Of the visitors to Rocky Mountain National Park more than 50 percent are Colorado residents, and at Yosemite more than 90 percent have registered as Californians.

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The pecuniary advantages of the tourist business to States and communities in which Federally supported properties are located are, of course, generally recognized, and accepted, where the resources are of sufficient national interest to warrant the Federal expense involved. But the principle upon which Federal care of areas of outstanding educational, scenic, and recreational value is justified has very much less application in determining a Federal-aid policy for protection of vast acreages of privately and State owned forest lands.

No attempt is made here to evaluate this factor as against cost of maintaining the conditions that make forest lands attractive for that purpose. The intent is only to point out that it is a factor that should be weighed in determining a Federal-aid policy.

FACTORS AFFECTING POLICY OF FEDERAL AID

Some of the broader national considerations pointing to Federal participation in State forestry affairs, together with the degree of the Federal interest, have now been explained. The system of Federal aid in forestry as it operates under present-day legislation and appropriations has been described in a preceding section. It remains to consider as realistically as possible the more specific factors which condition the usefulness of Federal aid and which must be observed in the successful administration of its present and future programs.

Against the Federal-aid forestry projects it has sometimes been argued that a Federal bureau has been put in a position where it can dictate State policies and procedure by threat of withdrawing funds, thus weakening State and private initiative and independence; that States in which the ratio of Federal taxes to allotments is high are made to pay for forestry in States where the reverse is the case; and that the bait of Federal funds has caused some States to appropriate more for the work than they should.

In other words, the issue of Federal aid in forestry is on all fours with the issue in many other forms of Federal aid. It must be admitted that there are arguments on both sides, and Federal aid must depend for justification on whether or not its advantages outweigh its disadvantages. The position taken by the writer is that the advantages predominate, provided that the law is administered in a cooperative and not a dictatorial way, that a proper balance is maintained between Federal contribution and Federal requirements, and that Federal assistance to States and private owners is maintained on a ratio that properly represents the national as compared with State and private interest. These considerations are factors in all of the activities of Federal aid in forestry as now administered. The more important activities demand separate discussion and will be taken up in the following order: Protection against fire, establishment of woodlands, woodland management, research, control of forest insects, control of tree diseases, acquisition of lands, and finance.

PROTECTION AGAINST FIRE

ATTITUDE OF LANDOWNERS

The major interest of owners of forest land in the past has been in the merchantable wood that it supported rather than in the growing of another crop of timber. Following the clearing of many millions of acres of land and its devotion to farming, it came to be the general

belief that most forest land would, after the timber was removed, be absorbed in agriculture. While there was altogether a large acreage of timber on soil that was too rocky or too steep to be cultivated, even that land was thought to have pasturage possibilities. As a rule no effort whatever was made to preserve conditions that would result in another crop of timber.

Today, as a result of a long period of adversity for agriculture, the view is quite different. Owners of forest land have now very widely accepted the opinion that such land holds small promise of being valuable for economic purposes other than timber growing. Great progress has therefore been made toward a general understanding that fires are a detriment to future values rather than a help in preparing the land for a better use. That realization has not, however, resulted in a universally active interest in fire protection on the part of landowners. A large percentage of cut-over land now supports no timber of merchantable size and quality, and contains little young growth of any considerable size. The possibility of cutting another timber crop from it is too far removed to be of definite interest to the average landowner, and the sale value of young-growth forests, except in the Northeastern States and the naval-stores region in the South, has been as a rule very small. Hence owners have been deprived of any financial incentive for protecting such lands.

On the other hand, where forests constitute present marketable values that are in danger of destruction from fire, the interest of the owners has been keen, and large sums of money have been expended by them for protection. But the owner's expenditure will necessarily be in proportion to what he regards as his risk of loss, and it cannot be expected that private activity in protecting cut-over forest land will be great unless increase in values through growth promises more than enough to offset protection and carrying charges. Owners have no difficulty in understanding this proposition. It is believed, however, that timber values are in sight on many cut-over lands, much nearer than the owners now appreciate. A great opportunity for Federal aid lies in building up better morale among landowners with respect to fire protection. The means provided are definitely suited to the purpose, though not yet adequate, namely, sharing the burden of costs and pointing out prospective values on the land. At present the success of Federal aid is severely handicapped by the pessimism of many owners.

PUBLIC ATTITUDE TOWARD FOREST FIRE PROTECTION

The former indifferent attitude of the resident nonlandowning public toward forest fires has changed greatly during the last 20 years as a result of anti-fire propaganda and the growing opposition of owners to forest burning as such. Except in some regions in the South, forest fires are very generally regarded as an evil and their prevention and suppression as an obligation. There is still not a sufficiently aroused public feeling, however, or a sufficient feeling of personal responsibility to make adequate protection possible at reasonable cost in many parts of the country.

Again, in the regions of larger timberland holdings there may be found an unsympathetic attitude toward fire protection because of a rather widespread antagonism to the corporations or individuals

holding the land. While it may arise from a number of causes, it reflects a common feeling of protest against the larger holdings. Too often the local residents consider that fire is not damaging them but is putting an opposed group to loss or inconvenience. Therefore, while they would not maliciously set fires or hinder the efforts of the landowners to control them, they are not greatly concerned unless fires assume disastrous proportions. The need here is to intensify the conviction that forests are a community asset, regardless of who owns them, and that "everybody loses when fires burn." The difficulty of enforcing fire laws where this conviction does not exist is obvious.

Federal and State participation in the actual expense and organization for fire control has been a large factor in improving the point of view of the resident public. The fact that public agencies are in partnership with the landowner in fire protection or have taken over the whole task as a matter of public responsibility is a convincing argument in favor of care and active cooperation on the part of the individual citizen, altogether apart from the fear of legal penalties for acts of incendiarism.

USE OF FIRE ON LAND BELONGING TO OTHERS

Official estimates indicate that more than one third of the fires occurring on forest lands under protection are caused by smokers and campers, mostly on land belonging to other people. Through tradition and custom, the right of the public to make use of the forests and woodlands in private ownership for hunting, fishing, and other forms of recreation is well established. While there are laws in many States protecting landowners against undue use of this sort, they are generally deficient if reviewed from the standpoint of fire protection alone, and are especially difficult of enforcement. The solution of the problem involves questions such as seasons open to hunting and fishing, and will ultimately require a balancing of benefits and hazards and an equitable adjustment between public rights and requirements and those of the landowner. The matter can now be handled only by the State, even the use of federally owned forest land being, under the terms of withdrawal, largely subject to State statutes in these respects.

NECESSARY USE OF FIRE BY LANDOWNER

Fire is an essential tool in logging, land clearing, farming, and construction projects. It follows that its use by the landowner or tenant must be legalized under the general rights of ownership, provided that such use does not infringe on the rights of other individuals or the general public.

Fires spread easily, and the establishment of practices necessary in the public interest and not unduly burdensome on the landowner offers many difficulties. It involves the establishment by law of seasons during which burning for disposal of debris or for other purposes is permissible, and of the conditions under which it may be done. In regions of serious fire hazard, proper protection requires the setting up of local authority for the issuance of burning permits and provision for inspection work and law enforcement.

Few single causes have been responsible for more disastrous forest fires than inflammable material left on the ground after cutting and removal of timber. As a general rule approximately 40 percent of the tree has been left behind as of no commercial value. In addition there is often a large amount of dead-and-down material. Owners of forest land have not been generally willing, of their own accord, to dispose of this material by methods that insure against spread of fire, because they have not regarded the loss that they themselves might suffer as equal to the cost of proper disposal. Most States have passed laws requiring one form or another of so-called slash disposal. Some of the laws need strengthening and clarification, but, generally speaking, the difficulty lies more in enforcement than in lack of legal authority. Proper slash burning requires careful piling, the right day for burning, and care and judgment in the operation.

Very commonly the precautionary measures necessary to prevent the spread of fire from slash or other burnings represent some hardship and expense to the landowner, and many problems are involved in arriving at and enforcing requirements fair to all concerned. Ability of a protective organization to solve these difficulties and those discussed in the caption above depends very largely on the attitude of the public toward fires. If local sentiment is antagonistic or indifferent, it can be accomplished only in part and at relatively large expense.

STATE LEGAL BASIS

The Federal statute requires the State to provide by law for a system of fire protection before it can participate in Federal appropriations for that purpose. All of the States with forest lands in need of organized protection have made legal provisions which the Federal Government has regarded as meeting requirements for at least a beginning of cooperative protection, although in three States cooperation is not now active. There has been a very gratifying disposition throughout the States to amend their fire protection laws or to enact new laws based on the experience of other States when it has seemed that gains could be made by such a policy. Federal aid has been influential in bringing such changes about through the advice of experienced Federal cooperative agents and through pressure for legislation considered adequate and appropriate as a condition of continuing the Federal assistance. Nevertheless, an ideal basis of State cooperation is far from attainment in many cases.

Systems of protection necessarily vary greatly according to forest conditions and fiscal limitations in the different States, but there are five principles that should be followed as a standard.

1. Forest-fire protection, along with other forestry activities in the State, should be placed by law under the supervision of a nonpolitical, technically competent, and reasonably permanent department, board, commission, or other authority, serving in forestry matters alone or in connection with other conservation activities, and hereinafter referred to as "the commission."

2. The law should provide for placing responsibility for protection directly on an official with adequate experience and training, to be selected by the commission. It should delegate to this official wide latitude in administration, subject to review by the commission only in the more important phases of policy, planning, and accomplishment.

3. Provision should be made for operation of the merit system in matters of employment and promotion, and responsibility for proper discipline and control should be lodged with the State officer above designated, subject to appeal to the commission.

4. Salary ranges and other conditions of employment should be set by the commission.

5. In States where private owners are expected to pay a share of protection costs, the law should make specific provision for and outline broadly, subject to regulation by the commission, the terms under which private cooperation is to be recognized.

An analysis of existing State laws shows many failures to fulfill these various requirements. Likewise performance in fire protection shows weakness directly traceable to that failure. Continuing allotments of Federal funds to States should be more and more firmly conditioned on the adequacy and effectiveness of State laws and the competency of organization under them.

ESTABLISHMENT OF FARM WOODLANDS

Provision for Federal aid in farm tree plantings was made in the Clarke-McNary Act at the instance of those who believed that a national program of forestry should include the establishment of woodlands and shelter belts on farms, both for wood production and for the sake of other economic and social returns through shelter to livestock, shade, and farm beautification.

The farmer who owns submarginal farm acres that might better be used for growing trees is generally in a better position to plant trees than the owner of large areas of forest land, because he may be able to do it in off seasons without extra expenditures for labor. For the same reason, and because he can utilize his product more closely, he is able to realize greater net returns for what he grows. However, the total of resulting wood products that would find their way into the market, or the savings in timber on other forest areas, is as yet of much less consequence than the benefits from shade and shelter and from growing on the farms a limited quantity of needed material which otherwise would not be available for farmers' use. Whether farm forest plantations will become a major factor in the Nation's timber supply remains a question for the future to answer.

Federal aid in the planting of farm woodlands amounts to a small subsidy to State nurseries. Produced in large quantities under competent management, trees suitable for farm planting can be raised at prices greatly below those at which commercial nurserymen sell them. State nurseries for growing such stock can be made largely self-supporting through sales. Free distribution of stock has not generally been found as satisfactory as sale at prices approximating costs of production, because when trees are free many people will ask for them who have no plans or well-formed intention of properly planting and protecting them.

One of the arguments that has been offered against this project is that it furnishes a form of Federal aid to a single class of citizens, and that there is no more reason why farmers should be provided trees free or at low cost for planting than other landowners. Much more determined and forceful objections have come from some commercial nurserymen, who have contended that through Federal encourage-

ment and participation the States have engaged in the growing of nursery stock in competition with private business, and that since the State nurseries are in part supported by public funds private nurserymen are unable to compete.

The validity of both these arguments must be recognized, and justification for the projects rests on the question whether public interest is best served through the encouragement to tree planting that the Federal act provides or through encouragement to business by withdrawing from this field in favor of the commercial nurserymen.

In the first place, it is believed that no distinction between farmers and others should be made in the distribution of nursery stock, for reasons that will be discussed later. On the question of State competition it is the belief of State and Federal workers acquainted with the project that it has on the whole stimulated rather than restricted the business of commercial nurserymen. The general observation of public officials has been that farmers cannot or will not pay the seedling prices charged by commercial nurserymen for farm planting on an extensive scale, and that unless they can secure stock at much lower cost it will not be planted. But an actual or potential increase in commercial nursery business is seen in the fact that State nurseries do not generally supply trees for ornamental planting (the Federal Government in no case participates in that), and that the establishment of forest plantations and shelter belts tends to stimulate this demand.

Commercial nurserymen have also contended that when planting stock is supplied to farmers at very low prices, the result is much the same as if it were free. Nurserymen argue that if it costs nothing to secure the stock the farmer will often order it without any well-considered plans for planting, and consequently seedling distribution does not result in the woodlands and shelter belts contemplated by the law and its sponsors. The validity of this argument is recognized. It is not believed that public aid should extend beyond furnishing farmers or others needed technical advice and nursery stock at a price that will insure their interest if they order and pay for the trees. There is nothing to prevent the States purchasing the stock from private nurserymen if they are in position to furnish it at favorable prices.

Assuming limited basis of Federal cooperation, there would seem to be no good reason why the privilege of purchasing State-grown trees should not be extended to all landowners who wish to engage in the project of planting forests. The Forest Service has several times reported favorably on proposed amendments of the Clarke-McNary Act, which, if enacted, would extend its scope as thus indicated.

Federal interests in forest planting would seem to be as well served through planting by other landowners as by farmers, and many difficulties of administration would be avoided by the proposed change. It is not believed that large increases in Federal funds are called for in any event.

FEDERAL AID IN WOODLAND MANAGEMENT

FARM WOODLANDS

Approximately 20 percent of all the forest land of the country is in native woodlands on farms. They represent by far the most stable form of private ownership, and, from this important angle at least,

they offer the best field for improvement of private forestry practice and increase of production and hence are an entirely fitting field for Federal aid. In many communities and in a number of the most extensively forested States, farm woodlands are the major source of raw materials for the wood-manufacturing industries. They supply, in addition, a very large quantity of the fuel and structural material that is used on the farms. They are thus a considerable factor in the national timber supply, and their maintenance and improvement have important interstate aspects.

Farm woodlands may hold part of the answer to the national problem of agricultural distress. They offer possibilities in the use of labor on farms during inactive seasons, which commonly makes it possible for farm owners to hold forest land and sell from it manufactured or partially manufactured products, the receipts for which are net, as against sales of products by owners of more extensive forest areas, which entail a heavy expense for labor.

Total annual public expenditures, Federal and State, for cooperation in farm woodland management approximate $160,000 a year. This is essentially an extension activity and is administered as such. The funds provide for the employment of less than one field specialist for each 3 million acres of farm woodland, or perhaps about one to each 50,000 owners. Under the plan of organization, the field specialists, generally one in each State, work with the assistance of the county agents, who are expected to carry on forestry as a part of the general farm extension work. A large percentage of the poorer agricultural counties, in which the acreage of farm woodlands is high, do not employ county agents and so receive no assistance except what may be extended by the State extension forester direct. In other counties, owing to the pressure of other work, lack of training, or lack of interest, the county agents frequently furnish little advice regarding farm woodland management. While the results obtained thus far are apparently commensurate with public expenditures for the purpose, possibilities for greater returns through increased public activity are relatively large.

WOODLANDS NOT ON FARMS

From the abstract standpoint of Federal interest in the growing of forests and maintaining the supply of forest products, there seems to be no reason why farmers, as one class of owners, should be favored over others in assistance in woodland management. Indeed, the large commercial owner might make more effective use of the assistance given, since his management applies to a wide area.

Fundamentally, commercial woodland management falls outside the field of the agricultural extension system as now organized. On the farm the woodland management is a part of farm management, which involves many other activities. The farm woodland should presumably take its place in proper balance with all the other work. It was for this reason that administration of the Federal act was placed in the Federal agricultural extension services, in order that farm advisers in forestry should be fully acquainted with the business of the farm as a whole.

In other words, commercial woodland management falls more particularly within the sphere of the Forester. From that aspect it

may be argued, theoretically at least, that foresters might be detailed for extension work in that field either by the State or by the Federal Government, at nominal cost or no cost to the owner.

Arguments in favor of this proposal are that it is in accord with similar advice and assistance given to farmers regarding production of agricultural crops, livestock, etc., and to other industries regarding their particular lines of production. Probably the chief reason why the case has not been pushed much farther along has been merely the present lack of active interest in growing forests. The American people have only in recent years begun to appreciate that trees are a crop subject to arts of management and marketing similar to those of successful agriculture. Even after the word "forestry" had become firmly established in our vocabularly, it was popularly thought to mean only the preservation of existing forests or the planting of new forests. Its primary meaning is not yet commonly grasped, namely, the management of forest land so as to provide for both the harvesting of forest crops and the perpetuation of the forest by natural processes. Improvement of silvicultural, manufacturing, and marketing practices—in short, improved management—is a most urgent need. Forest lands in permanent private ownership should be synonymous with forest lands that pay their way. Because we have little background of experience in forest management, information as to the best practice is far less general than in the growing of farm crops, and a far-reaching scheme of aid is greatly needed if forest lands are to be made economically productive and self-supporting.

Against the proposal for more Federal aid in the form of forestry extension there has been offered the general argument that forest landowners should pay for such services, and objections have been heard from consulting foresters that public assistance at less than cost would mean unfair competition. The answer to these questions must hinge on the magnitude of the public interest at stake, and on whether individual owners can afford to pay for the services.

That the public is interested in keeping forest lands productive is a truth that might be endlessly reiterated. It is also true that a large percentage of the country's forest land is now so badly depleted of merchantable stands and good growing stock that its owners are unwilling to make even moderate investments in its management. It is not believed that the majority of forest owners, particularly of small tracts, can afford to pay adequate fees for the advice needed for management of their lands. As forest management develops, through public intervention or otherwise, and where exhaustive examinations are required or large tracts are involved, there is the distinct possibility that the practice of the consulting forester will tend to increase; but in the meantime there is a great need that should be met by the less intensive and lower-priced services that the public only is in position to furnish.

Extension work consists, of course, of making known to those in position to use it the results of research and experience. The Federal Government may proceed to carry the results of its work into woods practice either directly or with the help of State extension personnel, including State foresters, or, preferably, by both methods. Certainly, it seems that State organizations directly responsible under existing law for taxation systems, fire control, and other matters affecting the growth and utilization of forests should properly engage in the exten-

sion of knowledge of how to establish and manage forests. On the other hand, there are phases directly relating to the Federal Government's own research and practices in which extension work can probably be best carried on by the Federal organization.

FEDERAL AID IN RESEARCH

Research is a necessary part of the establishment of forests and the management of forest land. In every phase of the work—the collection of seed, the planting of denuded areas, the establishment of natural conditions favorable to tree growth, the protection of the stand, the cutting, manufacture, and conditioning of wood for use—success must depend on definite scientific knowledge. The scientific data of American forestry are as yet all too scanty. If, therefore, the Federal Government engages in any phase of forestry, research becomes properly a part of the effort.

It is not necessary, however, that the Federal Government spend funds specifically for research in the program of State aid. Present Federal legislation for aid in protection, planting, extension, and education allows for research work by the States along the particular lines of work appropriated for. States cooperating under section 2 of the Clarke-McNary Act can use Federal money in research work for fire control on the same condition as in fire control itself, i.e., upon approval by the Federal agency of projects undertaken. The same is true with reference to research in connection with planting and extension work. Should any other lines of Federal aid be undertaken, similar provision should and doubtless will be made. In view of this probability, there would seem to be little need of specific legal provision for Federal aid in research as such.

INVESTIGATION AND CONTROL OF FOREST INSECTS

NATURE AND EXTENT OF INSECT ATTACKS

Forest tree insects are usually heard of only when an epidemic breaks out. Hence they are thought of ordinarily as existing only in an epidemic stage. Quite the contrary is true. Scattered through the forests at all times are the same tree insects which form insect epidemics, but these are normally in a quiescent or so-called endemic stage. In this stage the insects play a normal part in the life history of the forest by killing trees weakened by other causes such as old age, lightning, or disease.

At any time, in either hardwood or coniferous forests, owing to factors such as a favorable season, dearth of natural enemies, or the like, some species of forest insect may increase with tremendous rapidity and change the infestation from an endemic to an epidemic stage. During the epidemic stage the insects are capable of covering many square miles or several States before natural causes intervene to restore normal conditions, after terrific losses have been incurred in forest values. The pine beetle epidemic in 1910–11 destroyed timber valued at millions of dollars in the Southern States. The larch sawfly epidemics practically wiped out the merchantable larch in the entire Lake States. The spruce bud-worm epidemic has caused immense losses in the spruce-fir forests in New England and Canada.

The great areas covered by individual insect epidemics necessitates something more than action by individual States. It is obvious that the effort and expenditure of one or more States may be completely wasted unless adjacent States give needed cooperation effectively.

CLASSES OF CONTROL WORK

Forest insect control may be divided into (1) investigative work on life history of the insects and their predators; (2) extensive insect survey work carried on constantly to locate insect epidemics in their incipiency and to furnish continuous information on changes in the various stages of each forest insect infestation; (3) control work proper, when the insects start or have started an epidemic, to check the spread of the epidemic.

The investigative work should be carried on by a corps of experts employed throughout the year. The extensive survey work need not be done by specialists but could be handled by rangers, wardens, or others familiar with general woods work, after a small amount of special training. Many States now have fire protective organizations in the field that would be useful in this type of insect work. In addition, some general supervision would have to be provided through either Federal or State agencies properly coordinated. Constant extensive insect survey should result in the location of forest insect infestations in their earliest or strictly local stages. In this stage local forces should do all in their power to stop them. Such control work is often very effective. It may usually be done before or after the fire season and, like the survey work, may be handled to a large extent by present State and private fire organizations.

CONTROL OF EPIDEMICS

When the epidemic is beyond local control, an emergency is presented which necessitates cooperation by the Federal Government with the States affected and threatened.

Whatever work is deemed necessary should be done on the same basis as fire-fighting work on Government land. Forest insects during a rising epidemic may increase at a ratio of 10 to 1 between the brood of 1 year and the next. A ratio of 5 to 1 each year is perhaps the average during the rise of an epidemic, which may extend over several years. The economy of doing control work when, say, 1,000 insects are active as against the next season with 5,000 is obvious.

Control of insect epidemics must apparently be undertaken by the Federal Government directly if effective action is to be had. It is impossible to estimate for annual needs of this kind as accurately as for fire control, because the variation in need is much greater, and it is therefore hardly logical to expect State organizations to deal with such epidemics as adequately as with fire or with insect survey and local control. Insect epidemic control must seemingly be conducted on much the same basis as control of dangerous infestations of farm crops by parasitic insects. There are many precedents for such action, of which the provision of Federal appropriations for control of the corn borer is well known. Federal appropriations to date for corn borer eradication approximate $18,000,000. The work was handled directly by the Federal Government, with such

State and private cooperation as could be administratively obtained, and without any legal stipulation as to State financial participation. The conditions of State cooperation should be left to the responsible judgment of the Federal agency administering the act. Usually they should be so administered as to require substantial cooperation, both in fairness to the United States and on the general principle that unless the State or the owners are interested enough to assist in work for their own benefit, it may not be worth doing at all.

On the whole it appears that continuing Federal aid on a fixed ratio of cooperation is applicable only to the survey and local or initial control of insects. Outside these activities, the factors affecting Federal aid in insect control seem comparable to those influencing Federal action in other emergencies, with the further proviso that some insects attack only trees of merchantable or nearly merchantable size, and in those cases greater emphasis should be placed on State and private contributions in control projects.

INVESTIGATION AND CONTROL OF TREE DISEASES

A prerequisite for disease control is research. The Federal agency is in the best position to carry out research on diseases of importance in several States. This is particularly true for introduced epidemic diseases, which are more destructive in States other than the one first invaded. On the other hand for native diseases of particular importance to individual States, study by State agencies is considered appropriate. The best solution of some of the more important problems could be obtained by cooperative research by State and Federal investigators. While State work on some types of forest pathological problems may properly be assisted by Federal contribution under the Hatch, Adams, and Purnell Acts, the central Government under the provision of the McNary-McSweeney Act proposes to make its principal contribution to such research by placing pathologists at its regional forest experiment stations.

There is also particular need for direct Federal aid in protecting the States from introduced diseases. Federal quarantine against parasites from other countries is necessarily a larger part of the protection system for forest trees than for crop plants. Federal activity is also essential in handling such introduced parasites as may slip through quarantine, since such work must often be done in one State primarily for the protection of the interests of another, and because only the Federal Government can maintain the mobile force of technical men necessary for prompt attack on an epidemic wherever it may appear. But where direct control measures are required, authority to condemn and destroy property is commonly necessary; this calls for State legal action, and, therefore, State cooperation. In securing concerted action against an invader that has already become established, as the white-pine blister rust, Federal leadership has proved invaluable to the State and private agencies that do most of the control work.

Native diseases in general do not ordinarily cause spectacular epidemics or threaten neighboring lands as do fires or insect outbreaks, and the application of preventive measures is therefore more properly a matter for the landowner. But since preventive measures have not reached the rule-of-thumb stage, there is need for a technical service force to help landowners translate the results of the research workers

into practical operation. Such service should be developed on a cooperative basis by Federal and State agencies in much the way as in the case of blister rust; the method is discussed more fully under the subhead Service Force for Control Application in the section covering Protection Against Forest Diseases under "National Programs Required and the Responsibility for Them".

PROPOSED FEDERAL AID IN LAND ACQUISITION

Large areas of land throughout the country, and particularly in the South, the West, and the Lake States, will apparently come into State and county ownership for taxes now delinquent. Some of this land can be sold again only for amounts less than taxes accrued against it. Most of it is in too poor a condition to warrant serious interest in its improvement by private owners. If it is held subject to resale, a continuous impoverishment will likely result through purchasers removing any values that have accrued and letting it again go for taxes. Whether or not the States make provision for it, many of them will be forced into permanent land ownership and management designed to build up values, or else intermittent public and private ownership with inevitable destruction of values will ensue.

To accept the first alternative and avoid the second will involve large expenditures of public moneys, which may be hard to find. There may likely be large additional areas of land which through adjusted taxes and public assistance can be held in a reasonably permanent status of private ownership, but which for administrative or other reasons should be publicly acquired. This can be accomplished through the Federal and State Governments acting independently or through joint financing of the acquisition, the subsequent management title resting with either agency. Programs of Federal aid embodying this idea are now being prominently advocated.

It is likely that the proposed Federal aid would stimulate State expenditures for acquisition to some extent. It is also certain that under present conditions the greater part of any Federal appropriation made available would be taken up by those States which have made most progress along forestry lines and which therefore are not in greatest need of aid, unless provision were made for application of the funds only to the States which have made less progress along this line.

The prospect as a whole is difficult and rather unattractive. Recognition of the principle of Federal help to enable States to acquire forest land might possibly lead to the thought that if it is proper for the Federal Government to pay part of the cost, it might pay it all, and this, in turn, to demands from States unable or unwilling to acquire land that Federal properties be turned over to them if or when they contain values that can be removed at a profit. Nothing is to be gained through public ownership unless the public is prepared properly to care for properties acquired, and the test whether it is so prepared can well rest on its ability and willingness to acquire it by its own efforts.

FINANCING THE FEDERAL AID SYSTEM

When the Clarke-McNary Act was under consideration, it was assumed that with a Federal contribution of 25 percent of the cost of fire protection, States and private owners would be able and willing

to supply the remainder needed. In the aggregate, private owners were counted on for one half the cost.

Fire protection systems had already been started in the majority of the forested States. In the Pacific coast and northern Rocky Mountain regions private owners had organized fire protection associations and had extended protection over a large percentage of forest lands, being aided only to a small extent by the States. In the New England and Middle Atlantic regions and in some of the States in other regions, protection organizations had been set up at public expense and were giving a degree of protection to part or all of the forest lands within their boundaries. In some of these States the system of State protection followed previous partial protection by owner associations. In States where no protective systems existed or only a beginning had been made at the time Federal cooperation was initiated, the Government has encouraged activity by matching State and private effort dollar for dollar up to a certain minor percentage of the total amount estimated as necessary. Under this stimulus much progress has been made in the setting up of State organizations, the arousing of public interest, and in actual extension of protection, but there still remains approximately 190 million acres without any form of organized protection. Most of this area lies within the States where protection work has started since the passage of the Federal aid acts, and on a considerable percentage of the land under organized protection the quality is far from adequate.

Those familiar with the work are agreed that satisfactory progress in fire protection may be expected in the New England, Middle Atlantic, and Lake regions, in those States north of the Ohio River in the Central region, and possibly in California, with a 25 percent Federal contribution. In the South and the Central States south of the Ohio River there is a very large acreage of cut-over lands that are relatively unattractive for private ownership and investment. From a careful consideration of the various factors involved, it seems reasonable to expect that with properly directed public cooperation the private owners in this part of the country might supply about 20 per cent of needed effort through cash contribution and other direct aid toward State-wide systems of protection, leaving the balance to be shared between State and Federal funds.

In determining this estimated percentage, the following factors have been considered: (1) The area of land containing marketable forest products; (2) the area of land containing young growth that is approaching merchantable size; (3) the demonstrated or probable interest of landowners in the establishment of forest stands on cut over areas; (4) the risk of loss from fire; and (5) the sums now being advanced by landowners for organized protection. These factors, of course, vary greatly by States and the average figures cannot be uniformly applied. In the Southern and the Central States private expenditures for organized protection are much less than the 20 percent estimated as possible. There is in total, however, a large amount of effort being expended by individual landowners in the South to protect their own properties, and, with public assistance and encouragement, it is believed that this effort can be largely expanded.

The States here under discussion contain about 25 per cent of the country's population. Their citizens do about 16.5 per cent of the

national retail buying and pay about 6 per cent of the national income tax.

About 50 percent of all of the forest land of the country is in these States and to extend thorough protection over the whole area at this time would probably cost as much as to protect the remaining forest area. Fires running over forest land generally do much less damage to commercial stands than they do in the West and in some of the northern States, and the need to save the killing of young trees in order to provide a future stand is never as keenly felt by either the landowner or the public as the need to save timber of larger size. These States are generally finding it difficult to raise sufficient funds for governmental and social-service functions, and it appears unlikely that they can within the next 10 or 15 years provide funds for adequate State-wide protection systems. Until such systems are definitely set up, the maximum of private effort cannot be developed.

In the Northwest, where about half of the privately owned forest land has not yet been cut over, private owners have been paying the larger share of protection expenditures, and it is believed that as an average about 40 per cent of the needed funds will be supplied from this source during at least the next decade. Three of these States are paying for the protection of a relatively large area of State-owned lands but contribute very little to the protection of lands in private ownership. The analysis indicates, however, that if the Federal share is increased to 25 percent of the total fund required, the States are financially able to supply the remainder.

It must be emphasized that such calculations cannot be taken as more than very broad indicators of ability to finance protection. There are many other considerations which will seriously impair their application to individual States. It is, however, believed that they are of some value in an attempt to arrive at an estimate of possibilities.

It should be stated also that theoretical calculation of ability to pay or comparative actual capacity to pay, if it were known, would not constitute an accurate index of what will be done.

Obviously, what any State spends for care of its forest resources will depend largely on how it regards the need for such expenditures in comparison with other needs. It appears that the older States, whose virgin forest were largely cut over before exploitation in the South and West began, have more fully realized the need for replacement and care of this resource and are inclined to give it a higher priority than those States where exploitation of virgin stands is still going on or has only recently been completed. These indications serve to emphasize the fact that a Federal-aid system can advance only at the rate that the cooperating agencies are ready to advance, and that State responsibility and State participation through tax-raised funds should be emphasized in future administration of the act.

THE FEDERAL RATIO

In the apportionment of money in all forms of direct Federal aid to States some general formula has been applied, and it does not appear practicable to depart from this principle, excepting perhaps temporarily. Therefore, the rato of Federal to State and private funds in the underfinanced States cannot well be increased without also increasing it in those which have demonstrated ability and willingness to provide needed funds under the present arrangement.

A practical question for consideration then is, What would result through a departure from the concept that the Federal Government should contribute not to exceed 25 percent of the funds needed in any State and should adopt a plan whereby the Federal portion would be increased? Or what if the legal limitation of 50 percent sharing were itself removed? The problem, it must be remembered is to lay down a general rule which will be automatic in action and not appear to involve arbitrary favors to particular States.

The present policy of the Bureau of the Budget is to approve Federal appropriations for 1 year equivalent to 25 percent of total expenditures in the last, and recent appropriations have been largely so determined. In allotting the funds the Forest Service now matches State expenditures dollar for dollar only up to 8 or 9 percent of the adequate amount, leaving the remainder to be distributed on a pro rata basis.

If it is desired to make the Federal contribution larger in cases where it is more needed, that could be done either through raising the basic 25 percent budget ratio or through adopting a plan whereby each State would be allotted an amount up to the full 25 percent of adequate funds, as fast as it could match the Federal contribution dollar for dollar. Under such an arrangement the States could now match approximately $1,000,000 more than the 1933 allotments. Of the million dollar increase, approximately half would be taken up by States that are in especial need of assistance. The remainder would serve to supply all but 2 or 3 of the other States with the additional funds needed for protection (as shown by the 1930 estimates), provided they maintained their own last 5-year average appropriations. A few States might decrease their own appropriations. From theoretical calculations it appears that this possible decrease in State appropriations might amount to approximately $250,000. Under this plan, therefore, with a Federal increase of approximately $1,000,000, total expenditures for protection would be immediately increased by about $750,000.

If, instead of this plan; one were adopted of allotting to States an amount equivalent to State and private expenditures but not to exceed one half of total needs as shown by the 1930 estimates, an increase in the Federal appropriation of approximately $2,500,000 would be indicated. But the net increase in total State and Federal expenditures together under this plan would seem to be little greater than from the other, because the first method would furnish sufficient Federal funds to bring up to a full adequacy status most of the States whose expenditures are sufficient to enable them to take full advantage of it, and it would make available to the others all they could now take on a share-alike basis with current appropriations.

The advantage of the second plan is that it would allow, under existing law, the allocation of the maximum of Federal funds to the States where Federal aid is most needed. Its disadvantages are (1) that it does not constitute an entirely sound Federal fiscal policy because it sets up estimates rather than actual expenditures as a basis for the division of Federal funds between the States, and (2) that it does not constitute a Federal program for complete protection, since it would carry protection in the now greatly underfinanced States only to the point of 50 percent of needed funds. After that point had been reached, all of the remainder would have to be supplied by the States and the landowners. It would, however, serve to advance the work during the next decade or more as fast as any

other plan that has been suggested, and, since there are so many influences that cannot be accurately appraised as this time, it seems impracticable to attempt to provide for them too far in advance.

Should the Federal Government desire to participate in protection to a greater extent than the half sharing now allowed by law, but with the authorization limit of $2,500,000, the total expenditures in some of the States could obviously be increased without exceeding estimated needs. If, for example, a ratio of 75 Federal and 25 State and private were used, the amount expended would be doubled in the States most needing protection as compared with results under the first plan discussed. To do that, however, would require a Federal appropriation of approximately $5,000,000, an amount exceeding that required under the first plan by about $2,500,000, with a resultant total increased expenditure for protection of only about $1,000,000. Aside from this consideration, common business foresight demands that the ratio of Federal participation in protection should be balanced by assurance of results from money expended. Assumption of all costs can be balanced only by complete control, and that can be had only through ownership or strict regulation of use. Assumption of a high percentage of protection costs requires corresponding guarantees as to permanency of the protection project. It is believed that guarantees as to protection alone will not in any case warrant a Federal sharing of more than 50 percent of the cost, and that as a general average the Federal percentage should be less than that amount.

Adherence to the latter policy apparently calls for either a large program of Federal acquisition, or public regulation, Federal or State, or both, if complete protection is to be reached within the near future. The possibilities and merits of public regulation and Federal ownership are discussed in other sections of this report, and conclusions as to a plan of procedure will be drawn in the program section.

The above discussion of the financial aspects of Federal cooperation and the comparisons made in it are limited to the subject of fire control. The Federal aid system now includes planting and management of farm woodlands and shelter belts, and other forms of Federal aid are in prospect. The relative need for those activities in the different States does not necessarily conform to the relative need for fire protection. In several of them, however, the needs are closely parallel, and in view of this fact and the fact that the total of other forms of existing and proposed aid is small in comparison to the cost of fire protection, it is believed that the considerations presented are applicable to the situation in toto.

STATE AID

By H. J. Eberly, District Forest Inspector

In the preceding discussion the advisability of and justification for Federal aid to the States in forestry have been pointed out in some detail. Passing from the sphere of Federal action to that of the individual States, it is found that the same considerations apply largely to the question of State aid to counties and to private owners. For example, it is good business for the State to have its forested counties grow timber supplies for its agricultural and industrial sections. Likewise, a forest insect epidemic originating on one pri-

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vately owned body of timber will pay no regard to property lines or county boundaries, and therefore State action becomes necessary to safeguard the general interest.

STATE FORESTRY LEGISLATION AND APPROPRIATIONS

State interest in private forest resources is not an idea of recent times. Protection and supervision of forest lands has long been accepted as a proper function of State government. As early as the seventeenth century, forestry and timber problems claimed the attention of our colonial legislative bodies. Prior to the establishment of our National Government hundreds of laws dealing with the use or care of forests had been placed on the statute books. Most of the Colonies gave legislative recognition to the menace of forest fires. These early statutes, however, were of regulatory nature only and were chiefly directed toward the protection of public and private property in merchantable timber and improvements.

No State had enacted legislation providing for the establishment of forestry departments or had provided funds for fire control until the latter part of the nineteenth century. The States which pioneered in making funds available for the protection of their forest resources were Minnesota, New York, California, and Pennsylvania.

Minnesota in 1876 appropriated $2,500 to be expended as premiums for the planting of forest trees, to aid an association of private forest owners. In 1895 a forest commission was created, with duties of preventing and suppressing forest and prairie fires. Expenses of such work, to be paid by the State, were not to exceed $5,000. New York in 1885 appropriated $15,000 for fire protection and sundry forestry purposes. California in 1887 appropriated $15,000, part of which was directed for use in fire prevention. Pennsylvania in 1897 provided for fire extinguishment, with payment shared equally by county and State. The county cost was limited to $500 annually.

By 1911, 12 States were expressing interest in their timber resources to the extent of making available a total of $165,975 for forestry work. Since that time, interest in forestry has been so largely expanded that at present 45 States are recognizing certain responsibilities in the work. Their interest, extending both to private and to State-owned forest lands, finds its most direct measure in the amount of State funds made available, which at present amount to more than $7,800,000 annually. This figure is taken from the latest State budget expenditure estimates submitted to the Federal Government. The following summary helps to visualize the character of the several projects which the State aid funds support and develop:

	Percent of estimated expenditures
1. Administration	7.6
2. Protection:	
Fire	41.5
Disease	1.9
Insects	2.6
3. Reforestation and nursery work	14.5
4. Purchase of forest land	15.7
5. Maintenance and improvement of State forest land	12.0
6. Research	1.2
7. Education	1.6
8. Extension	1.4
Total	100.0

Of the above expenditures, the part applying directly to forest projects on State lands is estimated at 35 percent, which largely constitutes State forest acquisition, management, and planting. The character and extent of the aid which is being extended by the States to private owners is discussed under a separate heading.

STATE INTEREST IN FORESTRY

The concern of the State in the protection and perpetuation of its private and public forest properties is even more direct than is that of the Federal Government. This concern is reflected in the actual amounts of State funds now being made available for fire protection, planting, extension, forest insect control, etc., which are considerably in excess of Federal aid. With State and private ownership embracing 82 percent of the Nation's forest area, the States' responsibilities in doing everything possible to protect and encourage the most productive use of this large area are clearly evident.

In 30 States the area of State and privately owned forest lands comprises 25 percent or more of the total land area. In these States the proper use of forest lands is a major factor of the land use problem as a whole. The drag of idle, unproductive land affects the economic welfare of all citizens, and the regrowth of forest crops on cut-over lands offers at least a partial solution of this difficulty.

It is clearly evident that continuous productive use of forest lands is necessary to enable the forested States to attain their maximum degree of economic and social development. In the majority of States, private forest lands constitute a vital component of the tax base. To the taxable assets of forest lands and timber as such are to be added those of sawmills, pulp and paper plants, and kindred manufacturing establishments, as well as logging equipment, railroads, and the like, all of which combine to form a most imposing aggregate of revenue-producing properties.

Employment of labor is recognized as the vital index of economic health. The harvesting and manufacturing of products from the forests provide a large share of the employment of labor in practically all States, and in several States the lumber industrial pay rolls exceed all others in numbers of men employed and wages paid.

FACTORS AFFECTING STATE ACTION

PUBLIC USE OF PRIVATE LANDS

Public use and abuse of millions of acres of privately owned forests constitutes one of the major justifications for State participation in extending aid to private forest owners. Public interest in forest protection is an obligation commensurate with the use of privately owned land by the public. In addition to timber production, forests usually provide hunting, camping, and scenic attractions, which in most regions extend beyond the owner's immediate advantage and carry over to the general public. In a State where public use of State and private forest areas contributes materially to the pleasure, profit, and well-being of its people or where forest areas are of sufficient attraction to bring in many citizens from other States, then making State funds available to insure the continuation of these benefits becomes at once a desirable and necessary State function of public service.

In most forested States little or no regulation against trespass is exercised by the private forest owner against the public which comes to use and enjoy his lands. Such public use carries with it dangers over which the owner alone has little control, and since the public has the enjoyment, it is justifiable for the public to pay for such abuse as may result. Carelessness with fire constitutes the chief danger and abuse, and it thus becomes a proper function of the State to extend aid not only to reduce this community hazard by legislation and police functions directed at the origin of forest fires, but also to aid the landowners in the costs of fire patrol and suppression.

CONCENTRATION OF WEALTH

The geographical distribution of taxable wealth within individual States is very unequal. Therefore State aid becomes highly necessary as a stabilizer of State-wide development and prosperity. This fact is most strikingly evident in States having large areas of cut-over lands. Many counties once rich in valuable stands of timber, saw mills, lumbering communities, and forest pay rolls are now poor. Although they once produced a large portion of the State's revenues and contributed materially to its prosperity, they are now unable to carry on their own functions, and must have State aid. The burden is therefore shared by the industrial centers and counties that have succeeded to greater wealth and prosperity. The fullest recognition of this factor of State aid is seen today in those northern and eastern States which were earliest cut over and which are now great centers of wealth and industrial development in other lines.

RELATIVE DESTRUCTIVENESS OF FIRES

One of the most important factors affecting State interest and aid is the extent to which forest fires endanger and destroy life and property. The damaging effects of fire differ greatly in different regions. For example, holocausts have occurred in the Lake and Western States. Towns have been wiped out, people burned to death, game destroyed, and whole stands of merchantable timber killed. The fire danger is so great in these regions and so seriously affects the life and prosperity of citizens and the welfare of the States as a whole, that public safeguards are generally recognized as essential.

Fire in the Southern States, on the other hand, seldom causes loss of life, and damage resulting from fires occurring during certain seasons of the year is often not readily apparent. In regions where fires do less visible damage, the people feel less need for taking public action than those in States of greater fire danger. Here the damaging effects of fire become a relatively less important factor of State concern and action.

The importance of fire protection has been particularly stressed because it is one of the most pressing forestry problems and practically all other field work in forestry is dependent for successful achievement upon the adequate control of fire. However, if States are earnestly concerned in promoting forest practices on privately owned lands they should not stop with fire protection. Both financial and legislative action needs to be provided by the States for other important forestry work such as forest insect and disease control, forest

research and extension, planting, etc. The preceding part has dealt in considerable detail with these other important factors and has outlined the parts the Federal Government and the States should play in developing means for promoting and maintaining adequate measures of control.

TAX DELINQUENCY

Another factor which will undoubtedly have a far-reaching effect upon State action in forestry is that of tax delinquency. In those States where large areas of private forest lands revert to the counties or States because of tax nonpayment, public action in forestry must necessarily result. This action may find direct financial expression or it may result in legislative action aimed to reestablish or maintain the private owners' interest in his cut-over lands. The Oregon, Washington, and Idaho reforestation laws and the forest crop laws of the Lake States are samples of this State legislative interest and action in forestry brought about by tax delinquency of private forest lands.

CONCLUSIONS

In summing up the factors influencing State aid, it appears that the two most important are, first, the relative damage which fires may do to life and property, and, secondly, the ability of the State to pay and to take legislative action necessary for control of the situation. The factor of fire damage is not here interpreted as constituting damage to timber values alone, but includes all other damage such as the detrimental effects on recreational use, hunting, stream flow, regulation, etc. As these effects of fire become better understood and appreciated as detrimental to the propserity and happiness of the people, then public action may be expected to follow.

The extent of this public demand and financial support will, of course, not be uniform. In the Lake, Middle Atlantic, and New England regions, particularly, individual States are manifesting in a substantial way, both in funds and in legislation, their public interest in forestry. This public desire appears firmly established and may be expected to grow and result in future continued and increased public participation. In the large pine and hardwood areas of the South, the factors of fire damage are not as striking as in the Lake or Pacific Coast States, and neither are the States as wealthy and therefore able at present to manifest as great a public financial interest as some of the richer industrial States. In the South, as elsewhere, increased State participation will largely result from a better financial situation and from a better realization of the use and value of second-growth stands.